

ABSTRACT

5 This invention discloses an apparatus for measuring an ion-
implantation ion energy and/or dosage. The apparatus includes a
scanning densitometer for measuring a reflected light from a monitor
substrate. The apparatus further uses a monitor substrate. A thin film is
supported on the monitor substrate wherein the thin film has an optical
characteristic that is sensitive to the ion-implantation. The apparatus
further includes a light source for projecting a measuring beam onto the
10 monitor substrate for generating a reflected light. The apparatus also
includes a bare silicon substrate for measuring a full scale reflected light
represented by I_0 reflected from the bare silicon substrate with the light
source projecting a full scale light onto the bare silicon substrate. The
apparatus further has a light source control means for controlling the light
15 source to project the full scale light onto a plurality of points on the
monitor substrate before and after an ion implantation for obtaining
reflection intensities I' and I'' . The apparatus further includes an ion-
implantation measurement controller for controlling the apparatus and
for calculating the implantation energy and/or dosage from the reflected
20 light from the monitor substrate and displaying implant profile data.